

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Kiyoshi NAKAYAMA et al.

Group Art Unit : 1624

Appl. No. : 09/842,234

Examiner : Deepak R. RAO

Filed : April 26, 2001

Confirmation No. : 7436

For : DRUG EFFLUX PUMP INHIBITOR

**THIRD SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir :

Further to the Second supplemental Information Disclosure Statement filed April 15, 2004 and in accordance with the duty of disclosure under 37 C.F.R. §1.56 and §§1.97-1.98, Applicants hereby bring to the Examiner's attention the following documents which were cited during the prosecution of U.S. Patent Applications 10/110,771 and 09/428,466:

U.S. Patent No. 3,907,808 to LESHER et al., which issued on September 23, 1975, together with patent family member U.S. Patent No. 3,753,993 to LESHER et al., which issued on August 21, 1973;

EP 0 279 239, which was published on August 24, 1988, together with patent family members U.S. Patent No. 4,992,434 to TÖPFL et al., which issued on February 12, 1991 and U.S. Patent No. 5,135,927 to TÖPFL et al., which issued on August 4, 1992;

U.S. Patent No. 4,404,207 to STERN, which issued on September 13, 1983;

U.S. Patent No. 4,665,079 to CULBERTSON et al., which issued on May 12, 1987, together with patent family members U.S. Patent No. 4,777,175 to CULBERTSON et al., which

issued on October 11, 1988, U.S. Patent No. 5,281,612 to DOMAGALA et al., which issued on January 25, 1994, U.S. Patent No. 4,638,067 to CULBERTSON et al., which issued on January 20, 1987, and U.S. Patent No. 4,771,054 to DOMAGALA et al., which issued on September 13, 1988;

DE 3417840, which was published on November 22, 1984;

EP 0 594 861 A1, which was published on May 4, 1994, together with patent family members U.S. Patent No. 5,368,771 to NAMEKAWA et al., which issued on November 29, 1994 and U.S. Patent No. 5,443,755 to NAMEKAWA et al., which issued on August 22, 1995;

U.S. Patent No. 4,013,647 to SELLSTEDT et al., which issued on March 22, 1977, together with patent family members U.S. Patent No. 4,116,960 to SELLSTEDT et al., which issued on September 26, 1978, U.S. Patent No. 4,057,632 to SELLSTEDT et al., which issued on November 8, 1977, U.S. Patent No. 4,129,735 to SELLSTEDT et al., which issued on December 12, 1978, and U.S. Patent No. 4,123,432 to SELLSTEDT et al., which issued on October 31, 1978;

WO 98/02430, which was published on January 22, 1998, together with patent family member U.S. Patent Application Publication No. 2002/0049235 A1, which was published on April 25, 2002;

JP 3-207789, which was published on September 11, 1991, together with an English language Abstract of the same;

JP 2-219892, which was published on September 3, 1990, together with an English language Abstract of the same;

JP 5-43878, which was published on February 23, 1993, together with an English language Abstract of the same;

EP 0 513 974 A1, which was published on November 19, 1992, together with patent family members U.S. Patent No. 5,206,235 to FISHER et al., which issued on April 27, 1993 and U.S. Patent No. 5,310,737 to FISHER et al., which issued on May 10, 1994;

EP 0 513 387 A1, which was published on November 19, 1992, together with patent family members U.S. Patent No. 5,677,319 to CHIHIRO et al., which issued on October 14, 1997, U.S. Patent No. 5,643,932 to CHIHIRO et al., which issued on July 1, 1997, U.S. Patent No. 6,080,764 to CHIHIRO et al., which issued on June 27, 2000, and U.S. Reissue Patent No. Re 37,556 to CHIHIRO et al., which re-issued on February 19, 2002;

JP 10-310578, which was published on November 24, 1998, together with an English language Abstract of the same;

WO 99/37667, which was published on July 29, 1999, together with patent family members U.S. Patent No. 6,436,980 to LEGER et al., which issued on August 20, 2002, U.S. Patent No. 6,114,310 to CHAMBERLAND et al., which issued on September 5, 2000, U.S. Patent No. 6,245,746 to CHAMBERLAND et al., which issued on June 12, 2001, and U.S. Patent No. 6,204,279 to LEGER et al., which issued on March 20, 2001;

WO 99/36422, which was published on July 22, 1999;

U.S. Patent No. 3,870,712 to HOLMES, which issued on March 11, 1975;

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S. NISHIGAKI et al., Chem. Pharm. Bull. 1969, Vol. 17, No. 9, pp. 1827-1831;

X.-A. LI et al., Antimicrob. Agents Chemother., 1994, Vol. 38, No. 8, pp. 1732-1741;

J. GREENE et al., J. Chem. Inf. Comput. Sci., 1994, No. 34, pp. 1297-1308;

WO 96/02507, which was published on February 1, 1996, together with patent family member U.S. Patent No. 5,512,581 to BROOKS et al., which issued on April 30, 1996;

EP 0 786 457, which was published on July 30, 1997, together with patent family member U.S. Patent No. 5,981,559 to NAGAOKA et al., which issued on November 9, 1999;

U.S. Patent No. 4,891,428 to NORDHOFF et al., which issued on January 2, 1990;

U.S. Patent No. 5,935,977 to YAMAZAKI et al., which issued on August 10, 1999;

WO 93/22312 A1, which was published on November 11, 1993;

WO 93/22315 A1, which was published on November 11, 1993;

WO 99/54304 A1, which was published on October 28, 1999;

GB 1305820, which was published on February 7, 1973;

WO 98/57957 A1, which was published on December 23, 1998;

WO 97/03967 A1, which was published on February 6, 1997;

J.-P. CHUPP et al., J. Heterocycl. Chem., 1989, Vol. 26, No. 6, pp. 1771-1780;

D. DeJOHN et al., J. Heterocycl. Chem., 1983, Vol. 20, pp. 1295-1302;

Chemical Abstracts, Vol. 115, 1991, abstract No. 105447 of Khim.-Farm. Zh., 25(5), pp. 55-58, 1991;

Chemical Abstracts, Vol. 92, 1980, abstract No. 157718 of Vses. Nauchn. Konf. Khim. Tekhnol. Furanovyykh Soedin., [Tezisky Dokl.], 3<sup>rd</sup>, pp. 97-98, 1978;

Chemical Abstracts, Vol. 72, 1970, abstract No. 111193 of Khim.-Farm. Zh., 4(1), pp. 24-26, 1970;

Chemical Abstracts, Vol. 66, 1967, abstract No. 75885 of Yakugaku Zasshi, 86(11), pp. 1014-21, 1966;

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Chemical Abstracts, Vol. 103, 1985, abstract No. 87754 of Yiyao Gongye, 16(2), pp. 66-8, 91, 1985;

Chemical Abstracts, Vol. 100, 1984, abstract No. 138915 of Khim. Geterotsikl. Soedin. (11), pp. 1521-3, 1983;

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Chemical Abstracts, Vol. 78, 1973, abstract No. 97460 of J. Heterocycl. Chem., 9(6), pp. 1203-7, 1972.

Y. C. MARTIN et al., J. Comp. Aided Mol. Design, 1993, Vol. 7, pp. 83-102;

R.D. CRAMER, J. Am. Chem. Soc., 1988, Vol. 110, pp. 5959-5967;

WO 98/04913 A1, which was published on February 5, 1998;

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JP 6-80654, which was published on March 22, 1994, together with patent family member U.S. Patent No. 5,273,986 to HOLLAND et al., which issued on December 28, 1993;

JP 10-195063, which was published on July 28, 1998, together with an English language Abstract of the same;

WO 98/57935 A1, which was published on December 23, 1998, together with patent family members U.S. Patent No. 6,255,321 to ICHIKAWA et al., which issued on July 3, 2001 and U.S. Patent No. 6,376,671 to ICHIKAWA et al., which issued on April 23, 2002;

JP 7-179426, which was published on July 18, 1995, together with patent family member U.S. Patent No. 5,508,408 to von SPRECHER et al., which issued on April 16, 1996;

Chem. Pharm. Bull., 39(5), pp. 1099-1105, 1191;

WO 93/07141 A1, which was published on April 15, 1993;

J. Org. Chem., 1996, Vol. 61, pp. 4810-4811;

EP 0330353 A1, which was published on August 30, 1989;

JP 61-246188, which was published on November 1, 1986, together with an English language Abstract of the same;

JP 62-12760, which was published on January 21, 1987, together with an English language Abstract of the same;

Japanese Laid-Open Patent Publication No. 60-197686, which was published on October 7, 1985, together with an English language Abstract of the same;

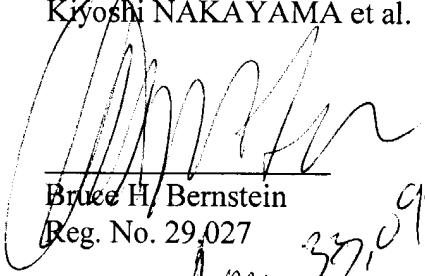
European Patent Application Publication No. EP 1 227 084, which was published on July 31, 2002;

Applicants respectfully request that the Examiner consider the above material and cite the same. Copies of the above-noted documents are attached and all of the documents have been listed on the attached PTO-1449 Form. The Examiner is requested to initial the appropriate spaces on the attached Form and to return a copy of the initialed form to the Applicants with the next official communication in the present application to confirm consideration of these documents.

Applicants note that an Office Action on the merits has not issued in the present application since the filing of a Request for Continued Examination. Thus, Applicants believe that no fee is necessary to ensure consideration of the submitted material. However, if an Office Action on the merits has issued and is crossing this statement in the mail, the undersigned hereby authorizes the Commissioner to charge any fee necessary including payment of any fee under 37 C.F.R. §1.17 (p) to Deposit Account No. 19-0089.

Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,  
Kiyoshi NAKAYAMA et al.

  
\_\_\_\_\_  
Bruce H. Bernstein  
Reg. No. 29,027

May 3, 2004  
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Patent and Trademark OfficeAtty. Docket No.  
P20938Serial No.  
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Applicant  
Kiyoshi NAKAYAMA et al.Filing Date  
April 26, 2001Group  
1624

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER						DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		3	9	0	7	8	0	8	09/23/75	LESHER et al.		
		3	7	5	3	9	9	3	08/21/73	LESHER et al.		
		4	9	9	2	4	3	4	02/12/91	TÖPFL et al.		
		5	1	3	5	9	2	7	08/04/92	TÖPFL et al.		
		4	4	0	4	2	0	7	09/13/83	STERN		
		4	6	6	5	0	7	9	05/12/87	CULBERTON et al.		
		4	7	7	7	1	7	5	10/11/88	CULBERTON et al.		
		5	2	8	1	6	1	2	01/25/94	DOMAGALA et al.		
		4	6	3	8	0	6	7	01/20/87	CULBERTON et al.		
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		6	4	3	6	9	8	0	08/20/02	LEGER et al.		
		6	1	1	4	3	1	0	09/05/00	CHAMBERLAND et al.		
		6	2	4	5	7	4	6	06/12/01	CHAMBERLAND et al.		
EXAMINER									DATE CONSIDERED			

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		5	9	8	1	5	5	9	11/09/99	NAGAOKA et al.		
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		5	2	7	3	9	8	6	12/28/93	HOLLAND et al.		
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		0	2	7	9	2	3	9	08/24/88	E.P.O.			
		3	4	1	7	8	4	0	11/22/84	GERMANY			
		0	5	9	4	8	6	1	05/04/94	E.P.O.			
	9	8	/	0	2	4	3	0	01/22/98	W.I.P.O.			
	3	-	2	0	7	7	8	9	09/11/91	JAPAN			
	2	-	2	1	9	8	9	2	09/03/90	JAPAN			
		5	-	4	3	8	7	8	02/23/93	JAPAN			
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		1	4	5	8	0	6	6	11/10/66	FRANCE			
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	9	3	/	2	2	3	1	5	11/11/93	W.I.P.O.			
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		1	3	0	5	8	2	0	02/07/73	GREAT BRITAIN			
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		1	2	2	7	0	8	4	07/31/02	E.P.O.			

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## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	1	English Language Abstract of JP 3-207789.
	2	English Language Abstract of JP 2-219892.
	3	English Language Abstract of JP 5-43878.
	4	English Language Abstract of JP 10-310578.
	5	English Language Abstract of JP 62-142168.
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1	0	S. NISHIGAKI et al., Chem. Pharm. Bull. 1969, Vol. 17, No. 9, pp. 1827-1831.
1	1	X.-A. LI et al., Antimicrob. Agents Chemother., 1994, Vol. 38, No. 8, pp. 1732-1741.
1	2	J. GREENE et al., J. Chem. Inf. Comput. Sci., 1994, No. 34, pp. 1297-1308.
1	3	J.-P. CHUPP et al., J. Heterocycl. Chem., 1989, Vol. 26, No. 6, pp. 1771-1780.
1	4	D. DeJOHN et al., J. Heterocycl. Chem., 1983, Vol. 20, pp. 1295-1302.
1	5	Chemical Abstracts, Vol. 115, 1991, abstract No. 105447 of Khim.-Farm. Zh., 25(5), pp. 55-58, 1991.
1	6	Chemical Abstracts, Vol. 92, 1980, abstract No. 157718 of Vses. Nauchn. Konf. Khim. Tekhnol. Furanovyykh Soedin., [Tezisky Dokl.], 3 <sup>rd</sup> , pp. 97-98, 1978.
1	7	Chemical Abstracts, Vol. 72, 1970, abstract No. 111193 of Khim.-Farm. Zh., 4(1), pp. 24-26, 1970.
1	8	Chemical Abstracts, Vol. 66, 1967, abstract No. 75885 of Yakugaku Zasshi, 86(11), pp. 1014-21, 1966.
1	1	Chemical Abstracts, Vol. 108, 1988, abstract No. 142146 of Inorg. Chem., 27(7), pp. 1167-73, 1988.
2	0	Chemical Abstracts, Vol. 106, 1987, abstract No. 196227 of Tap Chi Hoa Hoc, 23(5), pp. 9-11, 1985.
2	1	Chemical Abstracts, Vol. 103, 1985, abstract No. 87754 of Yiyao Gongye, 16(2), pp. 66-8, 91, 1985.
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2	3	Chemical Abstracts, Vol. 92, 1980, abstract No. 128023 of Khim. Geterotsikl. Soedin. (9), pp. 1194-200, 1979.
2	4	Chemical Abstracts, Vol. 89, 1978, abstract No. 109013 of Tezisy Dokl. - Resp. Konf. Molodykh Uch.-Khim., 2nd, Volume 1, pp. 14-15, 1977.

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